(GB) SAFETY AND MAINTENANCE INSTRUCTIONS

This meter is designed according to IEC61010-1 concerning electronic measururing instruments with an overvoltage category CATII and pollution 2.Folow all safety and operating instructions to ensure that the meter is used safel. Full compliance with safety standards can be garanteed only with test leads supplied. If necessary, they must be replaced with the original type only.

SAFETY SYMBOLS

- Important safety information, refer to the operating manual.
- Dangerous voltage may be present.
- Double insulation (Protection class II).
- Fuse must be replaced with rating specified in the manual.

CATII 600V This meter may only be used in following situations:
 * 1-phase electrical 230V installations behind the fuse box.
 * All appliances connected on the installations.

MAINTENANCE
- Before opening the case, always disconnect test leads from all energized circuits.
- For continue protection against fire; replace fuse only with the specified voltage and current ratings: 200mA/250V(Quick Acting), 10A/250V (quick acting)
- Never use the meter unless the back cover is in place and fastened completely.
- Do not use abrasives or solvents on the meter. To clean it using a damp cloth and mild detergent only.

DURING USE
* Never exceed the protection limit values indicated in specifications for each range of measurement.
* When the meter is linked to measurement circuit, do not touch unused terminals.
* Never use the meter to measure voltages that might exceed 600V above earth ground in category II installations.
* When the value scale to be measured is unknown beforehand, set the range selector at the highest position.
* Before rotating the range selector to change functions, disconnect test leads from the circuit under test.
* When carrying out measurements on TV or switching power circuits always remember that there may be high amplitude voltages pulses at test points, which can damage the meter.
* Always is careful when working with voltages above 60V DC or 30V ac rms.
* Keep fingers behind the probe barriers when making tests.
* Never perform resistance measurements on live circuits.

(D) SICHERHEITS- UND WARTUNGSHINWEISE

Dieses Messgerät wurde entsprechend der IEC61010-1 Norm konstruiert, die elektronische Messinstrumente der Überspannungskategorie CATII und Verschmutzungsgrad 2 beinhaltet. Befolgen Sie die gesamte Sicherheits- und Bedienungsanleitung, um den sicheren Einsatz des Messgeräts zu gewährleisten. Die vollständige Einhaltung der Sicherheitsnormen kann nur mit den mitgelieferten Messleitungen garantiert werden. Falls erforderlich, dürfen sie nur gegen den Originaltyp ausgetauscht werden.

- Für dauerhaften Brandschutz nur eine Sicherung mit der vorgeschriebenen Spannung und Nennstrom einsetzen: 200 mA/250 V(schnell ansprechend), 10 A/250 V (schnell ansprechend)
- Das Messgerät nur benutzen, wenn die hintere Abdeckung angebracht und komplett befestigt ist.
- Keine Scheuer- oder Lösungsmittel verwenden. Zum Reinigen nur ein feuchtes Tuch und mildes Reinigungsmittel benutzen.

WÄHREND DER VERWENDUNG
* Niemals die in den technischen Details vorgegebenen Schutzgrenzwerte für jeden Messbereich überschreiten.

SPECIFICATIONS

Maximum voltage (terminals–earth ground)	: CAT II 600V
Fuse protection	: 250mA/250V Quick acting, 10A/250V Quick Acting
Power	: 9V battery, NEDA 1604 or 6F22
Display	: LCD, 1999 counts, updates 2-3/ sec.
Measuring method	: Dual-slope integration A/D converter
Overrange Indication	: Only figure "1" on the display
Polarity indication	: "-"displayed negative polarity
Calibrated	: at 18 to 28°C and relative humidity to 80%.
Operating Environment	: 0 to 40°C
Storage temperature	: -10° to 50°.
Low battery indication	: " " appears on the display

ACCURACY AND OVERLOAD

DC VOLTAGE	: ±0.5% of rdg ± 2 digits
Overload protection	: 250V rms. For 200mV range and 600V dc or rms. ac for other ranges.
DC CURRENT	: ±1% of rdg ± 2 digits, (10A ±3%)
Overload Protection	: 250mA/250V and 10A/250V fuse.
AC VOLTAGE	: ±1.2 % of rdg ± 10 digits
Frequency range	: 40Hz to 400Hz.
Response	: Average responding, calibrated in rms. of a sine wave.
RESISTANCE	: 0.8% of rdg ± 3 digits
Max. Open Circuit Voltage	: 3.2V
Overload Protection	: 250V dc or rms. ac for all ranges.

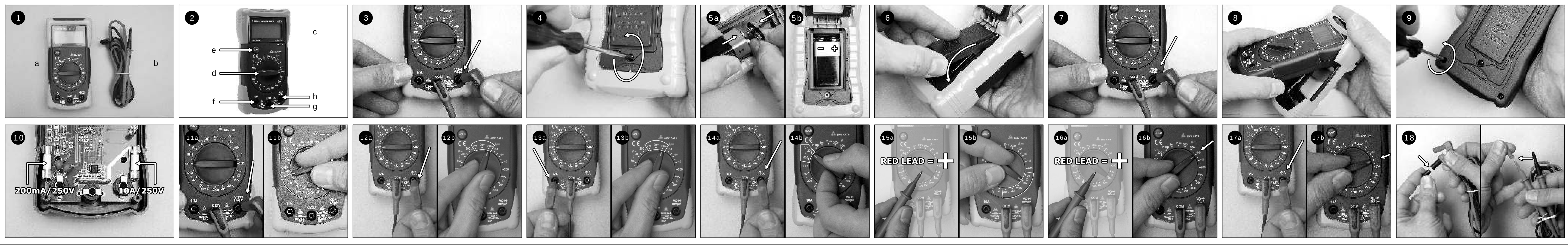
DIODE & CONTINUITY EXISTS

Overload Protection	: 250V dc or rms. ac.

M970
MULTIMETER



- GB USER'S MANUAL
- D BEDIENUNGSANLEITUNG
- PL PODRECZNIK UZYTKOWNIKA
- NL HANDLEIDING
- F MANUEL DE L'UTILISATEUR
- E MANUAL DEL USUARIO
- TR HIZLI KLAVUZ
- GR ?G?????? ??
- CZ UŽIVATELSKÝ MANUÁL
- H HASZNБLATI ЪTMUTATY
- RO MANUALUL UTILIZATORULUI
- HR UPUTSTVA ZA UPORABU



GB

MULTIMETER M970

This meter is a battery operated and handheld digital multimeter for measuring DC and AC voltage, DC current, Resistance and Diode. This meter can be used in CATII situations (safety symbols), generally is this in household situations.

THIS METER CONTAINS (1)
a. Multimeter.
b. Set of testleads.

FRONT PANEL DESCRIPTION (2)
c. Display.
d. Rotary switch. This switch is used to select functions and desired ranges as well as to turn on/off the meter.
e. Hold button. When this button is pushed, the display will keep the last reading and "H " symbol will appear on the LCD until pushing it again.
f. "10A" jack. Plug in connector for red test lead for 10A measurement.
g. "COM" jack. Plug in connector for black (negative) test lead.
h. "VOmA" jack. Plug in connector for red (positive) test lead for voltage, resistance and current (except 10A) measurements.

WARNING
Before attempting to open the case, always be sure that test leads have been disconnected from measurement circuits. Close case and tighten screws completely before using the meter to avoid electrical shock hazard.

INSTALLATION AND REPLACEMENT BATTERY
Before use and if during use "[- +]" appears on display, (it indicates the battery should be replaced), handle as following:
- Disconnect the testing leads (3).
- Open the backside cover with removing the screw (4).
- Place or replace battery in right way (5a / 5b).
- Close the cover and tight the screw (6).

REPLACEMENT FUSES
Fuse rarely need replacement and blow almost always as a result of operator's error. To replace fuse (200mA/250V and 10A/250V) handle as following:
- Disconnect the testing leads (7).
- Take the meter out of the protection rubber (8).
- Remove the 2 screws in the bottom of the case, and open it (9).
- Remove the old once, and replace with a new one (10).
- Close the cover and put it back in the protection rubber.

OPERATING INSTRUCTIONS DC VOLTAGE MEASUREMENT
1. Connect the red test lead to the "V.O.mA" jack and the black lead to the "COM" jack (11a).
2. Set rotary switch at desired DCV (V=) position. If the voltage to be measured is not known beforehand, set range switch at the highest range position and then reduce it until satisfactory resolution is obtained (11b).
3. Connect test leads across the source or load being measured.
4. Read voltage value on the LCD display along with the polarity of the red lead connection.

DC CURRENT MEASUREMENT
1. Connect the red test lead to the "V.O.mA" jack and the black test lead to "COM" jack (12a). For measurements between 200mA and 10A, remove red lead and connect to"10A" jack (13a).
2. Set the rotary switch at desired DCA (A=) position (12b / 13b).
3. Open the circuit in which the current is to be measured, and connect test leads in series with the circuit.
4. Read current value on LCD display along with the polarity of red lead connection.

AC VOLTAGE MEASUREMENT
1. Connect the red test lead to "V.O. mA" jack and the black test lead to the "COM" jack (14a).
2. Set the rotary switch at desired ACV (v~) position (14b).
3. Connect test leads across the source or load being measured.
4. Read voltage value on the LCD display.

RESISTANCE MEASUREMENT
1. Connect the red test lead to "V. O. mA" jack and black test lead to the "COM" jack. (The polarity of red lead is positive "+") (15a).
2. Set the rotary switch at desired "O" range position (15b).
3. Connect test leads across the resistor to be measured and read LCD display.
4. If the resistance being measured is connected to a circuit,turn off power and discharge all capacitors before applying test probes.

DIODE TEST
1. Connect the red test lead to "V.O.mA" jack and the black test lead to the "COM" jack (The polarity of red lead is positive "+") (16a).
2. Set the rotary switch at " ▶| " position (16b).
3. Connect the red test lead to the anode of the diode to be tested and the black test lead to the cathode of the diode.The approx. forward voltage drop of the diode will be displayed. If the connection is reversed, only figure "1" will be shown.

AUDIBLE CONTINUITY TEST
1. Connect the red test lead to "V.O.mA" jack and the black test lead to the "COM" jack (17a).
2. Set the rotary switch at " •))) " position (17b).
3. Connect the red test lead to two points of circuit to be tested if continuity exists.
4. Built-in buzzer will sound when there is a connection.

TIPS
- When the display shows "1." is the selected desired position too low
- Savety first, read safety instructions in this manual !
- Before use remove safety covers, and put back direct after use (18)

TR

MULTIMETRE M970

Bu ölçüm cihazi; DC ve AC gerilim, DC akim, Direnç ve Diyot ölçümlerinde kullanilan, pille çalistirilan dijital bir el multimetresidir. Cihaz CATII durumlarinda (emniyet sembolleri) kullanilabilir, ki bunlar genellikle ev içi kosullari kapsar

BU CIHAZ ASAGIDAKILERI IÇERIR (1)
a. Multimetre.
b. Test uçlari takimi.